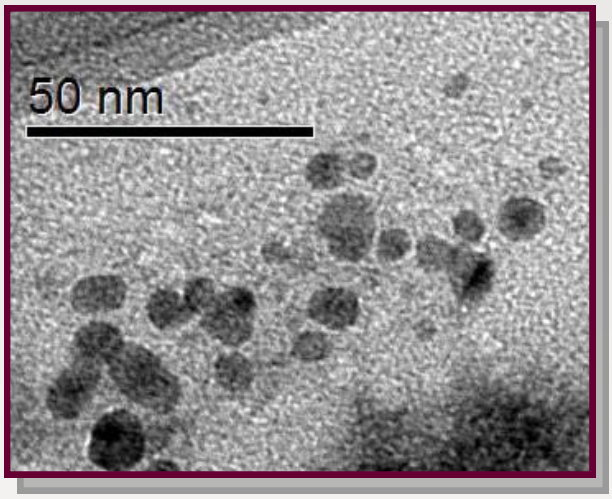
PLZT NANO-PRECURSORS FOR HIGH ENERGY DENSITY APPLICATIONS

TECHNOLOGY READINESS LEVEL: 4

SYNTHESIS HAS BEEN DEMONSTRATED SUCCESSFULLY IN THE LABORATORY

US PATENT PENDING

TECHNOLOGY SUMMARY



To improve the manufacturing and performance of ceramic materials Sandia National Laboratories has developed a method for synthesizing lanthanum-doped lead zirconate titanate (PLZT) nanoparticle precursors.

Using room temperature aqueous-based chemistry Sandia's method produces nanocrystalline material with superior breakdown strength and high energy density. This technical improvement confers drastic manufacturing benefits, reducing the weight, size and ultimately the cost of ceramic-based devices like capacitors.

This co-precipitation method is low cost and easily scalable, facilitating the transition into commercial, military and defense arenas. The aqueous solution alleviates environmental and safety concerns and serves to further reduce manufacturing costs.

APPLICATIONS & INDUSTRIES

Pulsed Power

Oil Exploration

Capacitors

Thermistors

Transducers

Military & Defense

Automotive

TECHNOLOGICAL BENEFITS

Reproducible

Low Cost & Scalable

Aqueous Solution Confers Improved Safety

End-Product Exhibits Superior Breakdown Strength and High Energy Density

TECHNOLOGY INQUIRY?

For more information or licensing opportunities contact us at

ip@sandia.gov

Refer to SD # 12119

or visit

https://ip.sandia.gov

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